

REMARKS

Applicant thanks Examiner for his examination of the pending application. Pursuant to the September 8, 2008 office action, Examiner has rejected claims 1-5, 24-29, and 42-49. Examiner has objected to claims 6-23 and allowed claims 30-41 and 50-55. Applicant has amended the claims as follows:

1. In addition to grammatical edits, Applicant has amended claim 1 to clarify that the ECG signals are synthesized from data obtained from less than ten electrode sites.
2. Applicant has made grammatical edits to claims 2, 3, 4, 5, 8, 13, 15, 23, 24, 30, 34, 40, 42, 43, 46, 50, 52, and 54.
3. Applicant has amended claim 7 to make it independent by including the limitations of previously presented claim 1, thereby making it, and claims dependent thereon, allowable in accordance with Examiner's current office action.
4. Examiner's objection to claim 23 under 35 U.S.C Section 112 has been addressed by amending the limitation "the body posture" and removing the need for an antecedent basis.
5. Applicant has added to claim 38 the limitation of "wherein said five electrode sites comprise said Vm site, said VnR site, said Vc site, a R site placed on or near the right upper limb and a L site placed on or near the left upper limb".

Examiner has rejected claims 1-5, 27-29, 42, and 46-49 as being anticipated by Lovejoy (U.S. Patent No. 6, 453,186) and has rejected claims 1-5, 24-29 and 42-49 as being anticipated by Meij (U.S. Patent No. 6,690,967). Examiner asserts that, among other limitations, all elements of claim 1 are separately disclosed in both Lovejoy and Meij. In particular, Examiner states that claim 1 is disclosed by Meij at Col.3, lines 27-46, Col. 4, lines 14-24, Col.9, lines 27-33, and Col.8, lines 27-41, and, separately, by Lovejoy at Col. 4, line 12 to Col. 5, line 17. Applicant respectfully disagrees with Examiner's application of the cited references and, therefore, traverses Examiner's rejections.

Conventionally, generating ECG signals require the use of 10 electrode sites. The standard 12 lead ECG is divided into two sets: the limb leads and the precordial leads. Combinations of the limb electrodes form the limb leads; these leads are named I, II, III, aVR, aVL and aVF. Each precordial lead is formed between one of the six "V" electrodes and the average of RA, LA and LL (also known as the Wilson Terminal). The precordial leads are named V1, V2, V3, V4, V5 and V6. Applying a 12 lead ECG is problematic, however. The use of ten electrodes plus associated wiring often causes discomfort to the subject, even on short timescales. The placement of ten electrodes can take considerable time, particularly if carried out by a non-specialist. Additionally, the amount of electrode wiring can impede the clinician when performing other procedures on the subject, while the cost of the procedure is increased when using a larger number of electrodes.

The Applicant's invention enables the synthesizing of conventional 12 lead ECG signal(s) from a reduced set of electrodes. The use of fewer electrodes enables the more rapid, easier to implement measurement of ECG signals. In one embodiment, as claimed in claim 1, the reduced set of electrodes comprises the standard 12 lead electrode sites V2 and V5 plus at least one electrode positioned substantially level with V5 on the right anterior axillary line, and at least one further electrode positioned on each of the right hand side and left hand side of the body. Neither Lovejoy nor Meij disclose the ability to generate ECG signal(s) from less than ten electrode sites. On the contrary, they expressly disclose the use of a conventional number of electrode sites, including sites V1, V2, V3, V4, V5, V6, RA, LA, RL, LL, V4R, V5R, and V6R. At no point do the cited references disclose a method or apparatus for synthesizing 12 lead ECG signal(s) from less than ten electrodes. To make the reduced electrode set aspect of the present invention clearer, Applicant has amended claim 1 to include the limitation "wherein said ECG signals are synthesized from data obtained from less than ten electrode sites."

Because the cited references do not disclose the reduced electrode set aspect of the present invention, Applicant requests allowance of claims 1-6, 21-29, and 42-49, in addition to allowable claims 7-20, 30-41, and 50-55.